

REMARKS

Claims 21-27, 30 and 32-40 are pending in the present application. Claims 21-25, 29, 31 and 35-40 were rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Application No. 2002/0171843 to Frankel ("Frankel") in view of U.S. Patent No. 6,535,290 to Spanner ("Spanner"). Claims 26 and 27 were rejected under 35 U.S.C. 103(a) as being unpatentable over Frankel in view of Spanner and further in view of U.S. Patent No. 3,905,684 to Cook ("Cook"). Claims 28, 30 and 32-34 were rejected under 35 U.S.C. 103(a) as being unpatentable over Frankel in view of Spanner and further in view of U.S. Patent No. 4,746,798 to Amon ("Amon"). Claim 39 were rejected under 35 U.S.C. 103(a) as being unpatentable over Frankel in view of Spanner and further in view of U.S. Patent No. 6,248,988 to Krantz ("Krantz").

The claims have been amended. Claims 22, 24 and 40 have now been canceled without prejudice. Claims 41-44 have now been added. No new matter is added. Reconsideration of the application is respectfully requested.

Amendments to Independent claims 21 and 39

Independent claim 21 has now been amended so as to recite "an optical device for collinearly combining, for illumination in scanning microscopy, a first light beam and a second light beam having a different wavelength than the first light beam." Similarly, independent claim 39 has now been amended to recite "a method of combining first and second light beams having different wave lengths." Support for these amendments can be found, for example, in original claims 1 and 2 and at paragraph 0010 of the Specification.

Independent claim 21 has also now been amended so as to recite "a first dispersive element configured to split a first reference beam from the first light beam and a second reference beam from the second light beam." Similarly, independent claim 39 has also now been amended so as to recite "splitting a first reference beam from the first light beam using a first dispersive element; and splitting a second reference beam from the second light beam using the first dispersive element." Support for these amendments can be found, for example, in original claims 1 and 4 and

at paragraph 0016 of the Specification.

Further, independent claim 21 has now been amended so as to recite "a control element configured to independently adjust, as a function of the detected respective positions of the first and third reference beams and second and fourth reference beams, at least one of a propagation direction of the first light beam, a propagation direction of the second light beam, a position of the first light beam, and a position of the second light beam." Independent claim 39 has now been amended so as to recite "independently adjusting a propagation direction of the second light beam as a function of the detected respective positions of the second and fourth reference beams." Support for these amendments can be found, for example, in original claims 1 and 8 and at paragraph 0017 of the Specification.

It is respectfully submitted that no new matter has been added.

Rejections Under 35 U.S.C. § 103

Claims 21-25, 29, 31 and 35-40 were rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Application No. 2002/0171843 to Frankel ("Frankel") in view of U.S. Patent No. 6,535,290 to Spanner ("Spanner"). Claims 26 and 27 were rejected under 35 U.S.C. 103(a) as being unpatentable over Frankel in view of Spanner and further in view of U.S. Patent No. 3,905,684 to Cook ("Cook"). Claims 28, 30 and 32-34 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Frankel in view of Spanner and further in view of U.S. Patent No. 4,746,798 to Amon ("Amon"). Claim 39 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Frankel in view of Spanner and further in view of U.S. Patent No. 6,248,988 to Krantz ("Krantz").

Frankel describes a phase-based wavelength measurement apparatus for determining an unknown wavelength of a laser by measuring the phase difference between two orthogonally polarized beams derived from the laser. See Abstract.

Spanner describes an optical position measuring device having a detector element 7 for detecting an interference beam of rays 10 separated by a diffraction grating 2.1 and a signal-processing unit 9 that receives signals from the detector elements and provides positional values of an object to a CNC. See col. 5, lines 31-35, col. 6, lines 25-34, and Fig. 1.

Cook describes an optical beam splitting system having a plurality of reflective surfaces. See Abstract.

Amos describes a radiometer having a group 25 of wavelength selective reflectors including reflectors 26a, 26b and 26c. See col., 6, lines 14-17.

Independent claim 21, as amended, recites "a first dispersive element configured to split a first reference beam from the first light beam and a second reference beam from the second light beam; a second dispersive element configured to split a third reference beam from the first light beam and a fourth reference beam from the second light beam; a position detector configured to detect respective positions of the reference beams." It is respectfully submitted that none of the cited references teaches or suggests a position detector configured to detect respective positions of four reference beams, as recited in claim 21. The Examiner admits that Frankel lacks specific reference to a position detector (Detailed Action, page 2, lines 12-13). In addition Spanner also does not teach or suggest a position detector configured to detect the positions of light beams. In contrast, Spanner merely describes a detector element 7 that detects the position of a reflector 4 based on measuring steps which correspond to a predefined fraction of wavelength. The position of the beam described in Spanner is always in the same place, i.e., on the detector. Thus, Spanner does not teach or suggest a position detector which detects positions of light beams. Nor do Cook or Amos disclose the above-referenced features of claim 21. Therefore, a combination of all of these references, to the extent proper, could not render claim 21 or any of its dependent claims 23-27, 30 and 32-38 unpatentable.

Further, claim 21, as amended also recites the “a control element configured to independently adjust, as a function of the detected respective positions of the first and third reference beams and second and fourth reference beams, at least one of a propagation direction of the first light beam, a propagation direction of the second light beam, a position of the first light beam, and a position of the second light beam.” It is respectfully submitted that none of the cited references teaches or suggests a control element configured to independently adjust respective positions and/or propagation directions of two light beams. In contrast, the signal processor 9 of Spanner merely processes the interference signals, modulated as a function of displacement (Spanner, page 6, lines 27-30). Spanner teaches no element which could alter the propagation direction of beam components 10. Nor do any of Frankel, Cook or Amos teach or suggest the above-recited features of claim 21. Thus, any combination of these references, to the extent proper, could not render claim 21 or any of its dependent claims 23-27, 30 and 32-38 unpatentable.

Independent claim 39 has now been amended to recite splitting two reference beams from each of two beams of light and “detecting respective positions of the reference beams using a position detector.” As set forth above with respect to claim 21, none of the cited references teach or suggest detecting the position of four reference beams. Thus, a combination of all of these references, to the extent proper, could not render claim 39 unpatentable.

Independent claim 39 has also now been amended to recite “adjusting a propagation direction of the first light beam” and “independently adjusting a propagation direction of the second light beam.” As set forth above with respect to claim 21, none of the cited references teach or suggest independently adjusting the propagation direction of two light beams. Therefore, a combination of these references, to the extent proper, could not render claim 39 unpatentable.

Withdrawal of the rejections under 35 U.S.C. § 103(a) is respectfully requested.

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In view of the above amendment, applicant believes the pending application is in condition for allowance.

Respectfully submitted,

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